



Dr Phil Tucak monitors a Weddell seal anaesthetised using the sled-based anaesthetic machine.

JOHN VAN DEN HOFF

ALL CREATURES GREAT, SMALL AND ANTARCTIC

Veterinarian, Dr Phil Tucak, leapt at the chance to extend his skills with domestic and farm animals to Weddell seals.

I've had a long-held fascination with the vast white southern continent, and have been keen to get to Antarctica for many years. I grew up near the coast and, apart from regularly heading down to the beach for a swim or surf, I was intrigued by marine mammals such as dolphins, whales and seals. After graduating as a veterinary surgeon from Murdoch University in Perth in 1999, I worked in both farm animal practice and small animal practice in Western Australia. I then spent two years in the United Kingdom, before returning to work in a variety of practices in Western Australia, the Northern Territory and Tasmania.

In 2006 the opportunity to work as a veterinarian in Antarctica arrived in the form of a research project counting Weddell seals and assessing their body condition. The multi-year project is run by Dr Mark Hindell, from the University of Tasmania's Wildlife Research Unit, and Dr Nick Gales, from the Australian Antarctic Division. The scientists expect that data gathered during the project will allow them to assess the Weddell seals' foraging success over several years, providing an indication of the impact of fisheries activities and climate change.

Weddell seals breed amongst the ice covered fjords of the Vestfold Hills, several kilometres north of Davis station. The female Weddell seals usually start breeding after the age of six. They give birth around October and will care for their pups until they are weaned, about six weeks later.

Antarctica presented unique challenges to our research team (seal biologists Judy Horsburgh, John van den Hoff, and field project leader, Kathryn Wheatley), as we worked in often sub-zero temperatures to study the seals and catch the mother and pup pairs that would form part of the body condition assessment study. We travelled on the ice using quad bikes and undertook an aerial survey of seal numbers in the fjords via helicopter. Flying above Antarctica also allowed us to pinpoint where the mother-pup seal pairs were located amongst the fjords.

To measure and weigh the adult female Weddell seals we first had to net them. As Weddell seals are relatively placid, we were able to get close enough to place a hoop net over their heads, which they would then wriggle into. Very quickly they would relax, allowing me to administer an intravenous sedative injection and then anaesthetise them using a portable isoflurane anaesthetic machine (transported on a sled).

The anaesthetic machine was specially adapted by scientists and technicians at the Australian Antarctic Division for use in the extreme cold of Antarctica, and included an insulated housing and a battery-operated heating system. We also used heat packs and hot water bottles to keep the anaesthetic machine warm, and an esky to store the sedative and anaesthetic drugs in.



PHIL TUCAK

Each anaesthetic would last for approximately 17 to 20 minutes, during which time the seal was weighed – using a portable tripod and scales – and several girth and length measurements were collected. A small identifying flipper tag was also attached, and the seal's mouth was photographed for evidence of tooth-wear or infection.

During the anaesthesia, I would monitor the seal's respiration and heart-rate, and record these measurements. Once the anaesthetic wore off, I continued to monitor the seal until it recovered, usually within a few minutes. The seal pups could be safely caught and weighed without the need for any anaesthetic.

The opportunity to work in Antarctica was an incredible experience, and working so closely with such beautiful animals was extremely rewarding and an invaluable learning opportunity. I think Antarctica somehow gets into your blood, and I would love to get back there again soon...all I have to do now is work out how!

PHIL TUCAK (BSc, BVMS, CMAVA)

Dr Tucak works as a vet in Perth and as a television producer with ABC TV.

After returning from Antarctica he promoted the work of wildlife veterinarians through his role as the Murdoch University Veterinary Trust's BJ Lawrence Veterinarian in Residence (2006).